Port of Seattle

WA 2917
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December 11, 1990

Mr. Dave Croxton
U.S. Environmental Protection Agency Region X
1200 Sixth Avenue
Seattle, WA 98101

Dear Mr. Croxton:

Re: Chemical Processors, Inc. - Terminal 91 Facility
Draft RFI Workplan (3008 (h) Order)

Attached are the Port's comments and concerns regarding Chempro's Draft RFI Workplan. Our goal is to provide a more thorough identification of areas of contamination potentially associated with the period of Chempro's operation of the facilities.

The Port is interested in your contractor's review of this work plan. Could you please forward their comments to us when you send them to Chempro.

We appreciate your keeping us informed of the progress of this order and any meetings planned.

If you have any questions, please call me at (206) 728-3192.

Sincerely,

Douglas A. Hotchkiss
Environmental Management Specialist

/rah
8467V

cc: Susan B. Donahue - Chempro
Aggerholm, Nicolai

P.O. Box 1209
Seattle, WA 98111 U.S.A.
(206) 728-3000
TELEX 703433
FAX (206) 728-3252

Page	Comment

A-2 Drawings from January 1931 and September 1932, indicate that the Seattle Port Commission and Richfield Oil Company were the probable owners/operators of tank systems located west of the present location of the Chemical Processors facility. These tank systems were demolished in the 1940s.

The September 1932 drawing shows oil and gas piping from the location of the present Chemical Processors facility. This piping was operated by the Texas Company who were successors to California Petroleum Company.

A-2 Port began managing site as a marine cargo terminal in 1972. As part of the reacquisition of the T-91 naval property the Port acquired the current Chemical Processors facility property in 1976.

A-2 The description of waste streams processed is too generic. The reference to "industrial wastewater, and industrial waste sludges" needs to be expanded to describe the spectrum of wastes accepted and their quantities. References to solvents, plating wastes, bottom sludges from pentachlorophenol and creosote wood treatment, and other industrial wastes accepted need to be included here.

Figures A-1 and A-2
The present configuration of the pier facility is not up to date on the maps. The site definition needs to include the pipelines leased by Chempro.

A-8 Modify the first paragraph to:

"Previous studies performed at or near the Chempro Pier 91 facility include Converse (1989,1990), Harding Lawson Associates (1990), Hart-Crowser (1981, 1984, 1985, 1988, 1989), GeoEngineers (1987), Port of Seattle Short Fill Monitoring 1985-1990 (1988, 1989), and Sweet-Edwards/EMCON (SE/E) (1988, 1989). Hart-Crowser (1989) dealt with the oil seepage into water pond (Lake Jacobs) behind the fill berm. The 1989 Hart Crowser study of oil seepage into the pond identified problems with soil and ground water contamination surrounding the pipelines leased to Chempro and operated by PANOCO. Subsequently, Converse Consultants continued with more detailed work on the pipeline. The Converse studies focused on soil and ground water chemistry in the area operated by PANOCO. The Harding Lawson study focused on soil and ground water chemistry associated with a small auxiliary diesel fuel underground storage tank, removed from the area just north of the City Ice Storage building. The 1981 to 1988 work of Hart-Crowser focused on the geotechnical and environmental aspects of the Pier 91 contaminated dredge project, referred to as the "short fill," ~~and the subsequent oil seepage into water ponded behind a fill berm~~. GeoEngineers' efforts centered on the City Ice and Storage building (warehouse W-390), where they performed a geotechnical and environmental evaluation prior to construction of the warehouse.

A-9 A Section is needed to address the "**Findings of Previous Studies by Others**" which would include the free product identified by the oil-water separator and Lake Jacobs.

This section should be titled "**Findings of Previous SE/E Studies**".

Item 2 under section 4.1 is an oversimplification and implies that the hydrostratigraphy is simple This section states that the soil units are laterally continuous beneath the site but in item 5 (next page) it states that the lower unit was not present.

A-10 In item 7, the upper aquifer is characterized as having a horizontal hydraulic conductivity of 10-4 to 10-2 cm/sec. The next section characterizes the middle unit as an aquitard with a hydraulic conductivity of 2 x 10-4 cm/sec (within the range of the previously described aquifer). This is inconsistent use of terminology. At best, the middle unit should be referred to as a "leaky aquitard" especially since a downward gradient has been documented toward the deeper aquifer. The observed range in thickness of the middle unit is not characterized.

A-11 Items 2 and 3 refer to the sum of BTEX and TCH compounds respectively. This method of data presentation can give a general indication of what families of chemical compounds may be present but they don't really address the issue of whether or not concentrations of these compounds are present at regulated concentrations. This needs to be addressed on a compound by compound basis. If groups of compounds of related origin are discussed, such as BTEX, then it may be appropriate to discuss the degree of contamination in terms of the substance that most significantly exceeds its cleanup standard (which is the compound that will essentially "drive" the cleanup).

A-12 The concentration of 2.934 mg/L of TCH presented in item 3 should be presented to the proper level of significance.

Item 7 is an understatement and needs to be modified to present the facts. The data from the first sampling event of the lower aquifer is not addressed even though this section is summarizing the results of the Phase 1 and Phase 2 work. In Phase 1, chloroethane, acetone, 1,1-dichloroethane, chloroform, benzene (12 ug/L), toluene, ethylbenzene, xylenes, and several semi-volatile compounds were detected in deep wells. Some of these compounds were also detected in the Phase 2 sampling events.

Figure A-4

The location of the piping system (7) needs to be extended to the north and the southwest.

Table A-1 Pathways Analysis

General Comments

- Sediment pathways are not adequately addressed for any of the sources. The issue of sediment contamination and its accumulation, transport and discharge through storm drain systems is a potential problem. Accumulated sediments in storm drain systems should be characterized. Surface water drainage in this area is to Elliott Bay and the site is in close proximity to storm water outfalls. Positive identification of the source of contaminants at storm drain outfalls can be difficult due to interferences from other sources but that is not a rational for not examining the issue.

Source 1: Oil/Water Separator

- The presence of free (floating) product is not addressed.
- All wells need to be checked for the presence of free (floating) product.
- TPH and cyanide needs to be addressed as contaminants of concern for both soil and ground water.
- The integrity of the concrete in the O/W separator and in drain lines is not evaluated.
- Ground Water:
  - Statements about the deep aquifer are not true.
  - No data is available documenting the effects of the O/W separator on the deep aquifer.
  - Ground water evaluation should continue with existing well CP-107 as stated, and with other wells.
  - Additional ground water characterization needs to be done: CP-112, TB-2, CP-120, and other wells.
  - New shallow and deep wells need to be installed next to the O/W separator (adjacent to the west side).
  - Additional characterization of the deeper aquifer is needed to evaluate current conditions and the significant discrepancies between the two rounds of sampling and analyses results provided.

Source 2: Diesel Yard Tanks

- The presence of free (floating) product is not addressed.
- TPH needs to be addressed as a contaminant of concern for both soil and ground water.
- Reference to TB-5 should note that it is adjacent to but not in the Diesel Yard.
- The integrity of the concrete in the diesel yard and in drain lines is not evaluated.
- Ground Water:
  - Additional wells should be installed: CP-118 and CP-119.
- Air Assessment:
  - The air assessment cited here is not referred to elsewhere in the document. What is the status of the air assessment?

Source 3: Big Yard Tanks

- The presence of free (floating) product is not addressed.
- TPH needs to be addressed as a contaminant of concern for both soil and ground water.
- Soil Pathway:
  - There is insufficient data to state that soil contamination is not an issue.
  - Additional soil sampling is warranted.
- The integrity of the concrete in the Big Yard and in drain lines is not evaluated.
- Ground Water:
  - Install an additional well east of the Big Yard Tank area.
  - Sample ground water from CP-109 as stated plus W-10, CP-103-A&B, CP-108-A&B and the new well.

Source 4: Small Yard Tanks

- The presence of free (floating) product is not addressed.
- TPH needs to be addressed as a contaminant of concern for both soil and ground water.
- Soil Pathway:
  - Additional soil sampling is warranted - two new soil borings in the center of the yard.
- The integrity of the concrete in the Small Yard and in drain lines is not evaluated.
- Ground Water:
  - Include CP-117 in ground water sampling.

Source 5: Waste Oil Spill Area

- TPH needs to be addressed as a testing analyte for both soil and ground water.
- The integrity of the concrete in the Waste Oil Spill Area and in drain lines is not evaluated.
- Ground Water:
  - Ground water sampling to include new wells plus CP-107 and CP-110.

Source 6: Pipe Alley Drainage

- TPH needs to be addressed as a testing analyte for both soil and ground water.
- Suspected leaks due to contaminants near oil/water separator and due to pipe exit holes below the high water mark (east end). The integrity of these pipes is unknown.
- The integrity of the concrete in the Pipe Alley Area and in drain lines is not evaluated.
- Soil Pathways:
  - Collect soil samples for analysis at CP-120.
  - Inspect pipe entry/exit hole and integrity and destination of pipes which could have acted as drains.
- Ground Water:
  - Ground water sampling as indicated plus CP-120.

Source 7: Piping System

- TPH needs to be addressed as a testing analyte for both soil and ground water.
- Review investigations for the Port and PANOCO.
- The integrity of the pipe system lines is not evaluated.
- Soil Pathways:
  - Additional soil borings with sample collection is warranted.
- Ground Water:
  - Ground water sampling as indicated plus CP-111 and new wells installed in additional soil borings.

Source 8: Warehouse Area

- VOCs and Semivolatiles need to be addressed as testing analytes for both soil and ground water.
- New wells don't adequately cover the area of concern.
- Under the floor - is there a crawl space?
- History an integrity of the floor must be evaluated.

SECTION B

The purpose of this section needs further clarification. Will all of these technologies be considered? If so, the planned data acquisition is inadequate based upon the data requirements listed. Some of the data needs listed in this section are not addressed in the sampling plan.

C-2 The first objective implies that information may be collected that would result in a revision to the scope during the course of the study. What will be the process for such a revision?

C-3 Comments regarding the deeper aquifer are not supportable. Additional study of the deeper aquifer is needed.

Change:
"Chemical testing of soil and ground water will include ..."

to:
"Chemical testing of all soil and all ground water will include..."

Analysis of TCLP metals is only appropriate to evaluate: (1) the proper disposal method for the soils should they be excavated and become a waste, and (2) limited evaluation of the potential ground water impacts that a contaminated soil could produce. Total metals analysis is more appropriate for evaluation of contamination in soil and for evaluation of the potential soil contamination relative to Washington State cleanup regulations. We recommend that total metals be substituted in place of TCLP and that TCLP testing be done for those soils which exhibit high concentrations of contaminants that could warrant TCLP testing. This testing would be for any of the groups of TCLP-related contaminant groups detected, including: metals, volatiles, and/or semi-volatiles.

Figure C-1

Harding Lawson Associates wells are not shown west of the oil/water separator, Hart-Crowser and Converse wells are not shown southwest of the tank farm area in the vicinity of the pipelines.

Additional boring/well locations as discussed above need to be shown.

Table C-1

Wells CP-111 and CP-112 should extend to a greater depth, about 20 feet, to examine the full thickness of the upper aquifer zone.

Add:

1. Shallow well SW of O/W separator for all testing to provide information of conditions immediately downgradient of the O/W separator.
2. Deep well SW of O/W separator for all testing to provide information of conditions immediately downgradient of the O/W separator.
3. Shallow well east of the Big Tank Yard for all testing to provide coverage of previously unexplored area.
4. Two shallow soil borings in the small tank yard for complete soil characterization.
5. Shallow soil boring next to HA-2 for characterization of PCBs in soil.
6. Additional soil borings and wells as necessary to further characterize soil, ground water, and free product contamination along the pipeline alignment.

C-6 Modify number of wells, soil borings, samples, and test as appropriate.

Specify which wells will extend to different depths.

C-9 Include a review of data on-file with the Washington Department of Health regarding water supply wells.

Table C-2

Petroleum hydrocarbon analysis should include all samples from above the water table (include the 4-6 foot sample too).

All samples with visual or screening evidence of petroleum hydrocarbon contamination should be tested for TPH by 418.1 or 8015 (modified) as appropriate.

Depending upon Ecology's position at the time of the study, TPH by 8015(modified) may be a more appropriate analysis than the 418.1. We are not aware of EPA's stance on this issue but if needed could discuss the pro's and con's relative to the two methods with them.

Table C-3

Methods for total metals should also be listed for soil analysis. Soil analysis for total metals should include the same suite of metals selected for water analysis of total metals. TCLP methods for volatile organics and semi-volatile organics should also be listed should they be needed.

The Organic Carbon Content analysis listed for soil may not be appropriate to evaluate total available carbon adsorption capacity since some of the total capacity of the soil could be substantially diminished due to the presence of organic contaminants.

Additional tests are needed to address the data needs described in section B. These are: moisture content of soils, soil pH, and electrical conductivity. Dissolved oxygen analysis is also needed for ground water.

No testing is indicated to evaluate the distribution of microorganisms or biodegradation rates.

C-14 & C-20

If field examination or field screening of the deepest planned soil sample from any boring exhibits evidence of contamination then the boring depth should be extended until no further evidence of contamination is present. In this event, soil sampling and analysis should continue at consistent intervals.

C-26

The testing method indicated in item 1 to detect the presence of free (floating) hydrocarbons may not be appropriate for small thicknesses of floating product. Other methods such as tape and paste will give more reliable measurements.

At the end of item #1, add:
"Purging and sampling of well W-10 will be accomplished using the dedicated bladder pump installed in the well."

Table C-5

The analysis of total metals (in addition to dissolved metals) in ground water will not provide information of significant value. It is rarely possible to develop monitor wells in fine grained sediments sufficiently to prevent the entry of particulates into the well. These particulates can significantly alter the result of a total metals analysis which is really only an artifact of the well installation and not significant from an environmental perspective. Total metals analysis would be appropriate for ground water, however, when sampling water supply wells <u>at the tap</u>.

Include additional wells in this table.

Part D

The Risk Assessment Section does not contain a regulatory assessment section. The data should be reviewed relative to state and federal waste designation regulations and Washington State cleanup regulation. Specifically, the data should be reviewed relative to the Model Toxics Control Act regulations (Chapter 173-340 WAC).

Part F

Is intra-laboratory duplicate analysis planned as part of the QA/QC program? This may be appropriate in part because two of the laboratories planned for this project have are not completely independent of the consultant or Chempro (Columbia Analytical Services, Inc. and Chempro Analytical Laboratory).

Table F-3

The quantitation limits for ground water analysis of arsenic, chromium, vinyl chloride, ethylbenzene, and all PAHs exceed the Model Toxics Control Act DRAFT (07/18/90) Method A Compliance Cleanup Levels for those compounds. This should be discussed with the laboratories and lower quantitation limits should be established where practical. (Lower quantitation limits for most of these compounds in ground water are routinely provided by laboratories.)

End of Comments